

*Settle<sup>3D</sup> is a powerful, easy-to-use, 3-dimensional program for the analysis of consolidation and settlement under foundations, embankments and surface loads. Settle<sup>3D</sup> also comes with liquefaction analysis capabilities, which can be used alongside the existing settlement calculation or as a standalone analysis.*

## Settlement Analysis

Settle<sup>3D</sup> is a program for the calculation of vertical settlement under surface loads. Complex, non-horizontal soil profiles can quickly be created using multiple boreholes, and various loading conditions are easily assigned. Modeling can be staged, and time-dependent consolidation analyses can be performed, including primary and secondary consolidation (creep) at user defined time intervals. Back analysis options allow you to determine the load or time required to achieve a given settlement.

## Loading

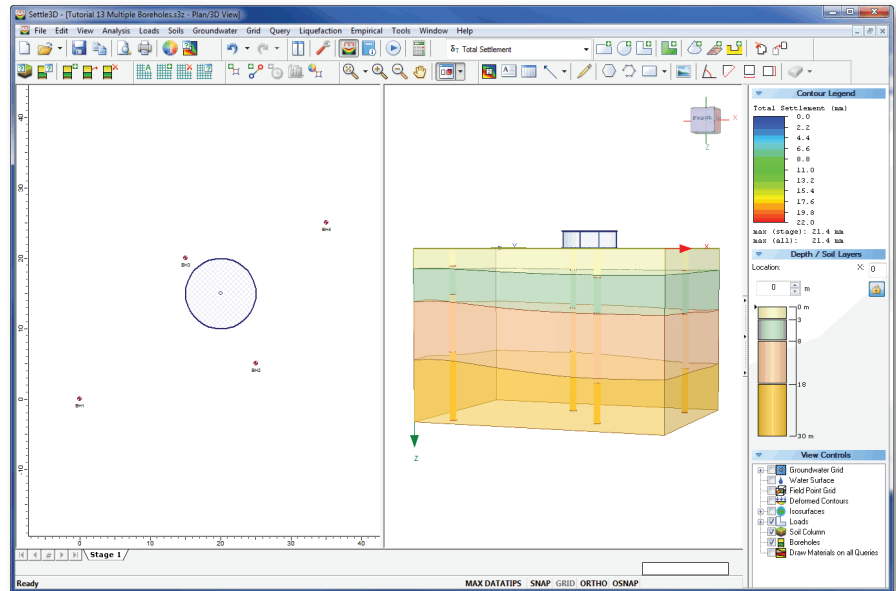
Loads of different shapes can be assigned, and can be applied at any depth. Both rigid and flexible foundations can be modeled. Excavations can be defined and loads applied within excavated areas. The embankment designer allows you to easily define multi-stage layered embankments. A new multi-layer stress method accounts for the effect of layer stiffness on stress distribution.

## Liquefaction

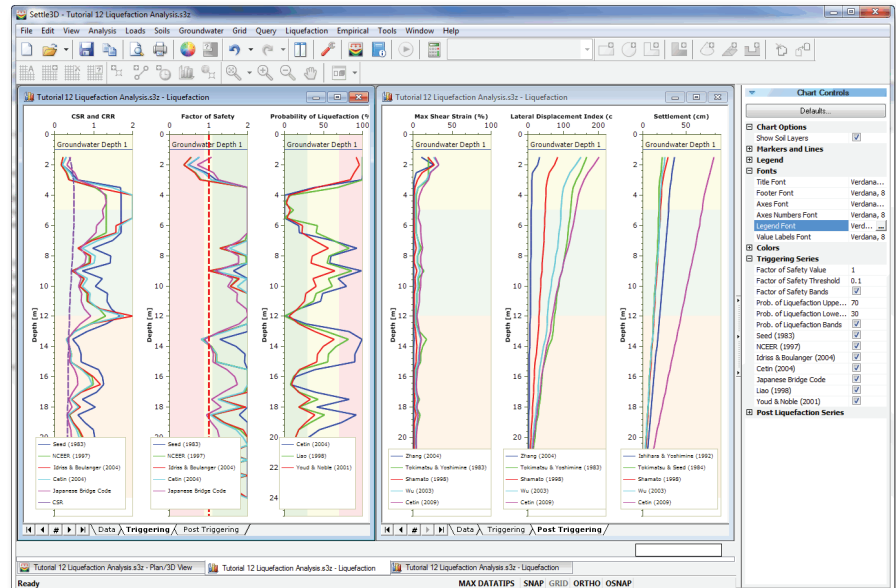
A liquefaction analysis in Settle<sup>3D</sup> can be done as a standalone analysis or in conjunction with the settlement analysis to determine the effect of different loads on liquefaction results. You can use SPT, CPT, or VST data for liquefaction analyses. A number of analysis methods are available and the results graphs are easy to interpret and easily customized.

## Data Interpretation

Settlement, stress and pore pressure results can be contoured along any user-defined plane.



Use multiple boreholes to define a complex, non-horizontal soil profile in Settle<sup>3D</sup>.



Liquefaction analysis in Settle<sup>3D</sup>. Graph illustrates Triggering and Post Triggering results.

Graphs are entirely customizable and can be exported to Excel with a single click.

### Modeling

- interactive editing
- right click shortcuts
- easily define arcs and circles
- import / export in DXF format
- grid / vertex / object snapping
- interactive sidebar
- depth control
- undo / redo
- metric or imperial units
- data tips

### Analysis

- non-horizontal soil layers
- multiple boreholes
- horizontal soil layers
- multiple layers / soil types
- multiple loads
- multi-stage analysis
- time-dependent consolidation based on Terzaghi theory
- immediate, primary and secondary consolidation (creep)
- hydro-consolidation

### Material Types

- linear elastic
- non-linear
- Janbu
- Koppejan
- collapsible soil
- variable with depth
- database of typical properties

### Liquefaction

- SPT, CPT, VST data
- multiple analysis methods
- comprehensive results

### Loading

- different shape load
- staged loading, pre-load
- embankment
- excavation
- uniform or variable
- flexible or rigid
- staged loading

### Stress Computation Method

- Westergaard
- Vertical ratio (2:1, angle)
- Multiple Layer
- Boussinesq

### Groundwater

- define multiple water grids
- define multiple piezo lines
- staged water table elevation
- horizontal drainage
- wick drain regions

### Compute

- field point grid
- line query
- point query
- back analysis using preload or time point query

### Empirical Methods

- Schmertmann
- Peck, Hanson, Thornburn
- Schultze and Sherif
- D'Appolonia

### Contour Data

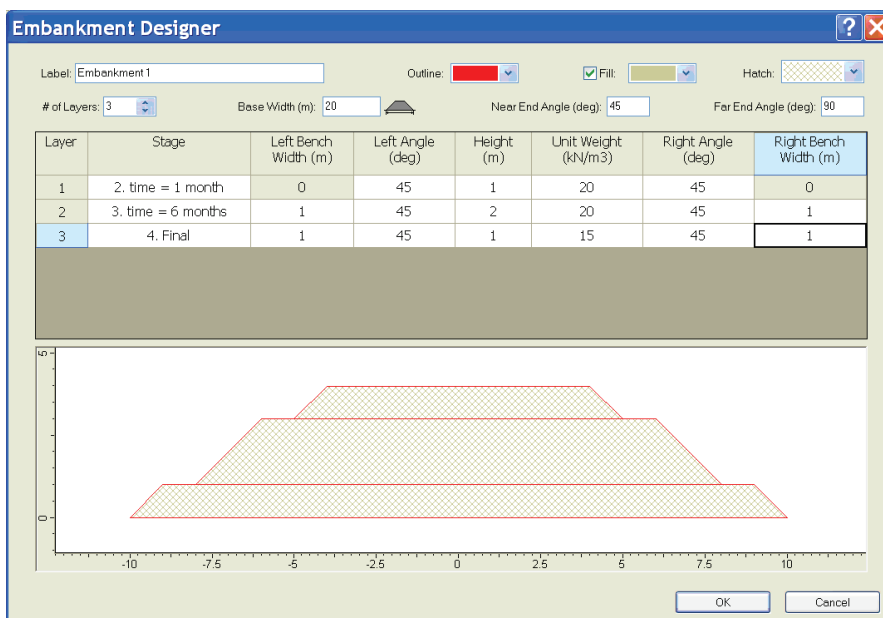
- settlement
- secondary consolidation
- stress
- pore pressure and excess pore pressure

### Visualization

- plan view / 3D view
- plot contours on horizontal, vertical or user-defined planes
- plot results on vertical or horizontal lines
- plot multiple stages, times or locations on one graph
- animate / rotate 3D view
- isosurfaces

### Export

- one click export to Excel
- copy to clipboard
- export image files
- Info Viewer
- drawing, annotation and dimensioning toolkit
- customize / save view options



Embankment designer in Settle<sup>3D</sup>

### Price & Licensing

Settle<sup>3D</sup> 3.0 is sold at the prices listed below.

**Personal License** (no USB key)  
\$1295 USD (\$1295 CAD)

**Portable License** (Uses USB key)  
\$1895 USD (\$1895 CAD)

**Flexible Licenses** are also available; they are sold as a yearly subscription, with price based on the number of concurrent users. Please contact [software@rocscience.com](mailto:software@rocscience.com) for more information.

[www.rocscience.com](http://www.rocscience.com)